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REMARKS

Favorable reconsideration is requested in view of the following remarks. Claims 1-5 and 7-14 remain pending in the application.

Claims 1-4, 7 and 11-13 are rejected under 35 USC 102(b) as being anticipated by Nagamatsu et al. (US 6,143,176). Applicant respectfully traverses the rejection.

Claim 1 requires treating organic waste with at least one of supercritical water and sub-critical water, separating the treated substances so that the water phase is collected, and subjecting the collected water phase to methane fermentation. These features are not disclosed in Nagamatsu.

In particular, Nagamatsu is directed to converting organic wastes into valuable resources (col. 2, lines 30-32). The reference notes that in the processes described in the prior art where the organic waste is subjected directly to a hydrothermal treatment, putrefaction of the feed slurry progresses to either elevate the chemical oxygen demand in the aqueous phase or cause odor and hygienic problems due to retention of large of a large amount of wastes, and the oils generated in the slurry by the hydrothermal reaction will adhere to or clog the voids in a filter that is used to dewater the slurry to produce a concentrated carbon slurry from which the aqueous phase has been separated (col. 1, lines 11-22 and 48-63 and col. 2, lines 11-19). In order to address such issues, the reference teaches a process where the organic waste is first subjected to a methane fermentation to reduce the content of such oils by decomposition and to meet the requirement of two essential steps of retention of the received waste and its homogenization (col. 6, lines 52-57 and 63-67 and col. 7, lines 1-2). Specifically, as shown in Figure 1, the process first involves a preliminary treatment 2 where coarse solids and the like are removed from the organic waste (col. 2, lines 60-63). The waste or waste slurry resulting from the preliminary treatment 2 is then subjected methane fermentation 4 (col. 3, lines 11-15). The fermentation slurry 7 withdrawn from the digester is then sent to the hydrothermal treatment step 11 (col. 4, lines 24-25). The carbon slurry 13 emerging from the hydrothermal treatment step 11 is then sent to the concentrating step 14, where it is freed of the aqueous phase to become a concentrated carbon slurry 17 that has a lower water content (col. 5, lines 18-21). The reference notes that the content of the organic matter in the aqueous phase separated from the carbon slurry after the hydrothermal treatment is so much reduced that the subsequent treatment of the effluent can be performed easily (col. 5, lines 34-37 and col. 6, lines 58-62).

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It can be clearly understood from the above discussion that in Nagamatsu's process, methane fermentation is carried out before the hydrothermal treatment, and that the order of the treatments is important to reduce the oils generated in the slurry by the hydrothermal reaction, to prevent the slurry from putrefying during retention in the process and to reduce significantly the organic matter in the aqueous phase obtained after the hydrothermal treatment, thereby facilitating the treatment of the aqueous phase.

The rejection refers to columns 4 and 5 of Nagamatsu and contends that the reference teaches the features of claim 1. However, the reference teaches a completely different process to address completely different problems. In particular, the reference describes a process where the organic matter is initially subjected to methane fermentation, and the resulting product after methane fermentation is subjected to a hydrothermal treatment. As discussed above, the reference clearly teaches that the initial methane fermentation treatment of the organic waste is essential to overcome the problems that occur when the organic waste is directly subjected to hydrothermal treatment. In contrast, claim 1 requires treating organic waste with at least one of supercritical water and sub-critical water to convert the organic waste into low molecular substances, separating the treated substances so that the water phase is collected, and subjecting the collected water phase to methane fermentation. In the process required by claim 1, the properties of the collected water phase are such that they provide ease of use in fermentation by microorganisms, thereby allowing methane fermentation to be carried out in a short time with high digestion efficiency. Nothing in the reference teaches or even suggests the features of claim 1 or the advantages. Accordingly, claim 1 and the dependent claims therefrom are patentable over the reference.

Claims 5 and 10 are rejected under 35 USC 103(a) as being unpatentable over Nagamatsu et al. Applicant respectfully traverses the rejection.

Claim 1 has been distinguished above. Claims 5 and 10 depend from claim 1 and are patentable over the reference for at least the same reasons discussed above. Applicant does not concede the correctness of the rejection.

Claims 8-9 and 14 are rejected under 35 USC 103(a) as being unpatentable over Nagamatsu et al. in view of Harada et al. (US 5,057,220). Applicant respectfully traverses the rejection.

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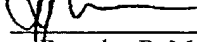
Claim 1 has been distinguished above. Harada does not remedy the deficiencies of Nagamatsu. Claims 8-9 and 14 depend from claim 1 and are patentable over the references for at least the same reasons discussed above. Applicant does not concede the correctness of the rejection.

In view of the above, favorable reconsideration in the form of a notice of allowance is respectfully requested. Any questions regarding this communication can be directed to the undersigned attorney, Douglas P. Mueller, Reg. No. 30,300, at (612) 455-3804.

Respectfully submitted,

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